

[0048] The user may view images displayed on the display apparatus. Definition of the displayed images may be determined according to illumination intensity of a peripheral region of the display apparatus. For example, assuming that the peripheral region of the display apparatus is dark and images displayed on the display apparatus are bright, the user's eyes are fatigued. Assuming that the peripheral region of the display apparatus is bright and images displayed on the display apparatus are dark, it is difficult to distinguish between light and dark, such that the user may have difficulty in normally and visually recognizing images displayed on the display apparatus.

[0049] In order to address the above-mentioned issues, although the conventional display apparatus has been designed to adjust brightness of images displayed on the display apparatus according to illumination intensity of the lighting or lamp located in the peripheral region, various types of images may be displayed on the display apparatus, and a bright screen image and a dark screen image may be displayed in real time, such that the conventional display apparatus has difficulty in controlling brightness of images displayed in real time in consideration of illumination intensity of the lighting and lamp installed in the peripheral region.

[0050] Therefore, the display apparatus and the method for controlling the same according to an exemplary embodiment may adjust peripheral illumination in response to brightness of images displayed on the display apparatus, such that the image display environment for allowing the user to view high-definition images in real time may be optimized. For convenience of description, it is assumed that the term "illumination intensity" or "intensity" has the same meaning as the term "brightness".

[0051] FIG. 1 is a perspective view illustrating the appearance of a display apparatus according to an exemplary embodiment. FIG. 2 is an exploded view illustrating the display apparatus according to an exemplary embodiment. FIG. 3 is a side cross-sectional view illustrating the display apparatus according to an exemplary embodiment.

[0052] The display apparatus 1 may process an image signal received from the external part, and may visually display the processed image signal thereon. Although the display apparatus 1 is assumed to be a television (TV) by way of an example, exemplary embodiments are not limited thereto. For example, the display apparatus may be implemented in various ways, for example, a monitor, a portable multimedia device, a mobile communication device, etc., and may also be applied to all kinds of image display devices configured to visually display various images.

[0053] Referring to FIGS. 1 to 3, the display apparatus 1 may include a main body 10 including various electronic components and a display panel 21 configured to display images for recognition of a user U. In addition, the main body 10 may include a drive circuit 30, a backlight unit (BLU) 50, and an optical sheet 40. The optical sheet 40 may include a plurality of optical sheets 41, 43, 45, and 47.

[0054] In this case, the display panel 21 may be one constituent element of the display 20, and may be configured to display images upon receiving a control signal from the controller 140.

[0055] The main body 10 may include a top chassis 11 provided to a front surface of the display apparatus 1, a

bottom chassis 13 provided to a back surface of the display apparatus 1, and a mold frame 15 contained in the display apparatus 1.

[0056] The top chassis 11 may be provided at an image display surface of the display panel 21, and may prevent exposure of an edge part of the display panel 21.

[0057] The bottom chassis 13 may be provided at another surface opposite to the image display surface of the display panel 21, and may prevent exposure of various constituent elements contained in the display apparatus 1. In addition, the bottom chassis 13 may protect various constituent elements contained in the display apparatus 1 from external impact.

[0058] The mold frame 15 may restrict movement of the display panel 21, the optical sheet 40, and the backlight unit (BLU) 50, and may fix the display panel 21, the optical sheet 40, and the BLU 50 to the top chassis 11 and the bottom chassis 13.

[0059] The display panel 21 may display various images according to externally input image signals.

[0060] The display panel 21 may be a light emitting display panel in which a plurality of pixels constructing the display panel 21 may autonomously emit light to form images, or may be a non-light-emitting display panel in which a plurality of pixels reflects, transmits, and blocks light to form images.

[0061] For convenience of description, the display panel 21 is described as a non-light-emitting display panel to form images by reflecting, transmitting, and blocking light generated by the BLU 50.

[0062] The display panel 21 may include a liquid crystal layer, a transparent electrode layer, a transparent substrate, and a color filter array.

[0063] The liquid crystal layer may include a liquid crystal. The liquid crystal may be an intermediate state between a crystal state and a liquid state. Optical characteristics of the liquid crystal may be varied according to change in applied voltage. For example, the direction of arrangement of molecules constructing the liquid crystal may be changed according to a change of an electric field applied to the liquid crystal.

[0064] One pair of transparent electrode layers to form the electric field in the liquid crystal layer may be provided at both sides of the liquid crystal layer. The electric field applied to the liquid crystal layer may be changed according to the change of a voltage applied between one pair of transparent electrode layers.

[0065] The transparent electrode layer may include a gate line, a data line, and a thin film transistor (TFT).

[0066] The gate line may be arranged in a row direction to turn the TFT on or off according to a gate signal, and the data line may be arranged in a column direction to transmit a data signal to a plurality of pixels through the TFT. As described above, the electric field applied to the liquid crystal layer may be changed according to not only the gate signal received through the gate line but also the data signal received through the data line, and the molecular arrangement of liquid crystals may be changed according to change of the electric field. In addition, light may or may not transmit the liquid crystal layer according to the molecular arrangement of liquid crystals.

[0067] The gate line and the data line may be formed of Indium Tin Oxide (ITO), Indium Zinc Oxide (IZO), or the like.